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10/517,562

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Gary Fairless Power

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EXAMINER

BRIGGS, NATHANAEL R

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,562

Applicant(s)

POWER, GARY FAIRLESS

Examiner

Nathanael R. Briggs

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-20 and 47-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-20 and 47-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/06/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 27 March 2007 have been fully considered but they are not persuasive. Regarding claim 1, Applicant argues that Schadt '936 does not disclose "a pattern formed by image areas and/or non-image areas written or printed in the at least one photo-alignment and/or in the liquid crystal layer". However, clearly, the liquid crystal layer has a pattern written in it (see column 7, lines 22-25), specifically, "For example, an image could be stored in one of the two LCP layers and corresponding textual information could be written in the other." Furthermore, Applicant argues that Schadt fails to disclose that the photo-alignment layer and/or the liquid crystal layer are patterned without the use of masks; and in claim 2, wherein the image and/or non-image areas are laser written in the photo-alignment or liquid crystal layers. However, according to MPEP 2113, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." Therefore, Applicant's arguments regarding the formation of the alignment layers and/or the liquid crystal layers are spurious toward the product of the device itself. Applicant's arguments are therefore not persuasive.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-2, 4, 8, 10-11, 13-20, and 47-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Schadt et al. (US 6,734,936).**

4. Regarding claim 1, Schadt discloses a liquid crystal device (see figures 1 and 6, for instance) comprising a substrate (1); at least one photo-alignment layer (3) applied to the substrate (1) and which is uniformly aligned with a polarized light source (column 6, lines 26-28); a nematic liquid crystal layer (4; column 15, line 49) applied to the photo-alignment layer (3); and a latent image (column 6, line 38) formed by the photo-alignment layer (3) and the liquid crystal layer (4) wherein the latent image comprises a pattern formed in the at least one photo-alignment layer (3) and/or in the liquid crystal layer (4) without the use of a mask and the latent image is viewable under cross-polarizers (24, 25). Claim 1 is therefore unpatentable.

5. Regarding claim 2, Schadt discloses a liquid crystal device (see figures 1 and 6, for instance) comprising a substrate (1); at least one photo-alignment layer (3) applied to the substrate (1) and which is uniformly aligned with a polarized light source (column

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6, lines 26-28); a nematic liquid crystal layer (4; column 15, line 49) applied to the photo-alignment layer (3); and a latent image (column 6, line 38) viewable under cross-polarizers (24, 25) formed in the at least one photo-alignment layer (3) and/or the liquid crystal layer (4), wherein the latent image is formed by image areas and/or non-image areas laser written in the at least one photo-alignment layer and/or the liquid crystal layer (column 8, lines 33-38). Claim 2 is therefore unpatentable.

6. Regarding claim 4, Schadt in view of Seiberle discloses a liquid crystal device according to claim 2 (see Schadt figures 1 and 6, for instance) wherein the latent image is formed by image areas and/or non-image areas of the photo-alignment layer (3) and/or the liquid crystal layer (4) removed by laser ablation. Claim 4 is therefore unpatentable.

7. Regarding claim 8, Schadt discloses a liquid crystal device according to claim 1 (see figures 1 and 6, for instance) wherein the liquid crystal layer (4) covers the substrate (1) in the entire area of the device (7). Claim 8 is therefore unpatentable.

8. Regarding claim 10, Schadt discloses a liquid crystal device according to claim 9 (see figures 1 and 6, for instance) wherein the photo-alignment layer (3) covers the substrate (1) in the entire area of the device (7). Claim 10 is therefore unpatentable.

9. Regarding claim 11, Schadt discloses a liquid crystal device according to claim 1 (see figures 1 and 6, for instance) wherein a uniformly aligned first photo-alignment layer (21a) covers the substrate in the entire area of the device, the latent image is formed by a pattern in a second photo-alignment layer (22a) applied to the first photo-

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alignment layer (21a), and the liquid crystal layer (22b) covers at least the second photo-alignment layer (22a). Claim 11 is therefore unpatentable.

10. Regarding claim 13, Schadt discloses a liquid crystal device according to claim 11 (see figures 1 and 6, for instance) wherein the liquid crystal layer (22b) is applied to the second photo-alignment layer (22a) in the pattern representing the latent image. Claim 13 is therefore unpatentable.

11. Regarding claim 14, Schadt discloses a liquid crystal device according to claim 3 (see figures 1 and 6, for instance) wherein the latent image is laser written (column 6, lines 26-41) into the at least one photo-alignment layer (3). Claim 14 is therefore unpatentable.

12. Regarding claim 15, Schadt discloses a liquid crystal device according to claim 11 (see figures 1 and 6, for instance) wherein the latent image is laser written (column 6, lines 26-41) into the second photo-alignment layer (22a). Claim 15 is therefore unpatentable.

13. Regarding claim 16, Schadt discloses a liquid crystal device according to claim 3 (see figures 1 and 6, for instance) wherein the latent image is laser written into the liquid crystal layer (4, column 8, lines 61-65). Claim 16 is therefore unpatentable.

14. Regarding claim 17, Schadt discloses a liquid crystal device according to claim 1 (see figures 1 and 6, for instance) wherein the liquid crystal layer (4) is fixed by curing (column 6, lines 33-35). Claim 17 is therefore unpatentable.

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15. Regarding claim 18, Schadt discloses a liquid crystal device according to claim 1 (see figures 1 and 6, for instance), which includes a coating (22b) over the liquid crystal layer (25). Claim 18 is therefore unpatentable.

16. Regarding claim 19, Schadt discloses a liquid crystal device according to claim 17 (see figures 1 and 6, for instance) wherein the coating (25) has a refractive index which substantially matches the refractive index of the liquid crystal layer (22b). Claim 19 is therefore unpatentable.

17. Regarding claim 20, Schadt discloses a liquid crystal device according to claim 18 (see figures 1 and 6, for instance) wherein the coating (25) covers the liquid crystal layer (22b) in such a manner to provide a device of substantially uniform height. Claim 20 is therefore unpatentable.

18. Regarding claim 47, Schadt discloses a security document or token incorporating a polarizing liquid crystal device in accordance with claim 1 (column 8, lines 42-45).

Claim 47 is therefore unpatentable.

19. Regarding claim 48, Schadt discloses a security document or token according to claim 47 (see figures 1 and 6, for instance) wherein the latent image is a portrait corresponding to the holder of the security document (column 2, lines 64-67; column 3, lines 1-6). Claim 48 is therefore unpatentable.

20. Regarding claim 49, Schadt discloses a security document or token according to claim 47 (see figures 1 and 6, for instance) wherein the polarizing liquid crystal device (7) containing the latent image is provided in a window of the security document (column 8, lines 42-45). Claim 49 is therefore unpatentable.

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21. Regarding claim 50, Schadt discloses a security document or token according to claim 47 (see figures 1 and 6, for instance) wherein the document includes cross-polarizers (24, 25) in a window for verifying the latent image formed by the polarizing liquid crystal device (7; column 8, lines 42-45). Claim 50 is therefore unpatentable.

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schadt et al. (US 6,734,936) in view of Knight et al. (US 5,678,863).

24. Regarding claims 6 and 9, Schadt discloses a liquid crystal device according to claims 1, (see figures 1 and 6, for instance) wherein the liquid crystal layer (4) is applied to the first and second photo-alignment layers. However, Schadt does not expressly disclose wherein the method of application is variable printing.

25. Regarding claims 6 and 9, Knight discloses a liquid crystal device similar to that of Schadt (see figures 5a and 5b, for instance), wherein all liquid crystal layers are variably printed on the photo-alignment layer in the pattern forming the latent image (column 6, lines 49-57).

26. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the printing process of Knight in the method of manufacturing the

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device of Schadt. The motivation for doing so would have been to create more detailed images that could be applied in each layer making reproduction virtually impossible, as taught by Knight (column 6, lines 53-56). Claims 6 and 9 are therefore unpatentable.

27. Claims 5, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schadt et al. (US 6,734,936) in view of Yip et al. (US 6,582,776).

28. Regarding claims 5, 7, and 12, Schadt discloses a liquid crystal device according to claims 1 and 11 (see figures 1 and 6, for instance), wherein the photo-alignment layers (3, 22b, 21b) are applied to the substrate in the pattern forming the latent image (column 15, lines 66-67; column 16, lines 1-4). However, Schadt does not expressly disclose wherein the photo-alignment layers are printed onto the substrate.

29. Regarding claims 5, 7, and 12, Yip discloses a method of forming a photo-alignment layer, wherein the photo-alignment layers are printed on the substrate (column 7, lines 26-31).

30. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the printing method of Yip in the method of manufacturing the device of Schadt. The motivation for doing so would have been to obtain a photo-alignment layer that displays excellent long-term photochemical stability, as exemplified in the invention of Yip (column 3, lines 9-12). Claims 5, 7, and 12 are therefore unpatentable.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathanael R. Briggs whose telephone number is (571) 272-8992. The examiner can normally be reached on 9 AM - 5:30 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathanael Briggs
9/13/07


ANDREW SCHECHTER
PRIMARY EXAMINER